

# SAFETY DATA SHEET

Creation Date 16-Apr-2012

Revision Date 18-Dec-2025

Revision Number 5

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

<b>Product Name</b>	Ethyl 4,4,4-trifluoroacetoacetate
<b>Cat No. :</b>	<b>AC119030000; AC119030050; AC119030250; AC119031000</b>
<b>CAS No</b>	372-31-6
<b>Synonyms</b>	Ethyl 3-oxo-4,4,4-trifluoroacetoacetate
<b>Recommended Use</b>	Laboratory chemicals.
<b>Uses advised against</b>	Food, drug, pesticide or biocidal product use.

## Details of the supplier of the safety data sheet

### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

### Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Flammable liquids	Category 3
Acute oral toxicity	Category 4

## Label Elements

### Signal Word

Warning

### Hazard Statements

Flammable liquid and vapor  
Harmful if swallowed

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep container tightly closed

Ground and bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Wear protective gloves/protective clothing/eye protection/face protection

Take action to prevent static discharges

Use non-sparking tools

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

Fight fire with normal precautions from a reasonable distance

Evacuate area

**Storage**

Store in a well-ventilated place. Keep cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Harmful to aquatic life with long lasting effects

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

**3. Composition/information on Ingredients**

Component	CAS No	Weight %
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	>95

**4. First-aid measures**

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

**Inhalation** Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

**Ingestion** Do NOT induce vomiting. Get medical attention.

<b>Most important symptoms and effects</b>	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water mist may be used to cool closed containers. Chemical foam. Water mist may be used to cool closed containers.

**Unsuitable Extinguishing Media** No information available

**Flash Point** 28 °C / 82.4 °F

**Method -** No information available

**Autoignition Temperature** No information available  
**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Flammable. Vapors may travel to source of ignition and flash back. Will form explosive mixtures with air. Containers may explode when heated. Vapors may form explosive mixtures with air.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Gaseous hydrogen fluoride (HF).

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

Health  
2

Flammability  
3

Instability  
0

Physical hazards  
N/A

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions** Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

**Methods for Containment and Clean Up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. Handling and Storage

**Handling** Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe dust. Do not breathe mist/vapors/spray. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.

**Storage.** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area. Keep container tightly closed in a dry and well-ventilated place. Incompatible Materials. Strong acids. Strong bases. Strong reducing agents.

## 8. Exposure controls / personal protection

### Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### **Engineering Measures**

Use explosion-proof electrical/ventilating/lighting equipment. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

#### **Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### **Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### **Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

#### **Recommended Filter type:**

Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

#### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

#### **Physical State**

Liquid

#### **Color**

Light yellow

#### **Odor**

Odorless

#### **Odor Threshold**

No information available

#### **Property**

#### **Values**

#### **Remarks**

#### **• Method**

#### **Melting Point/Range**

-39 °C / -38.2 °F

#### **Softening Point**

No data available

#### **Boiling Point/Range**

131 °C / 267.8 °F

#### **Flash Point**

28 °C / 82.4 °F

@ 709 mmHg

#### **Flammability (liquid)**

Flammable

**Method** - No information available

#### **Flammability (solid,gas)**

Not applicable

On basis of test data

#### **Explosion Limits**

No data available

Liquid

#### **Autoignition Temperature**

No data available

#### **Decomposition Temperature**

No data available

#### **pH**

6

10 g/l aq. sol

#### **Viscosity**

No data available

#### **Water Solubility**

10 g/l (20°C)

#### **Solubility in other solvents**

No information available

#### **Partition Coefficient (n-octanol/water)**

#### **Component**

#### **log Pow**

Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester

0.21

#### **Vapor Pressure**

8.0 mbar @ 20 °C

#### **Density / Specific Gravity**

1.250

#### **Bulk Density**

Not applicable

#### **Vapor Density**

No data available

Liquid

#### **Particle characteristics**

Not applicable (liquid)

(Air = 1.0)

**Other Information****Molecular Formula**

C6 H7 F3 O3

**Molecular Weight**

184.11

**Explosive Properties**

explosive air/vapour mixtures possible

**10. Stability and reactivity****Reactive Hazard** None known, based on information available**Stability** Stable under normal conditions. Hygroscopic.**Conditions to Avoid** Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Exposure to moist air or water.**Incompatible Materials** Strong acids, Strong bases, Strong reducing agents**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Gaseous hydrogen fluoride (HF)**Hazardous Polymerization** Hazardous polymerization does not occur.**Hazardous Reactions** None under normal processing.**11. Toxicological information****Information on expected route of exposure****Inhalation** Not an expected route of exposure.**Ingestion** May be harmful if swallowed.**Eyes** Avoid contact with eyes.**Skin** Avoid contact with skin.**Toxicology data for the components**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	855 mg/kg	-	-

**Toxicologically Synergistic Products** No information available**(b) skin corrosion/irritation;** No data available**(c) serious eye damage/irritation;** No data available**(d) respiratory or skin sensitization;**

<b>Respiratory</b>	No data available
<b>Skin</b>	No data available

**(e) germ cell mutagenicity;** No data available**(f) carcinogenicity;**

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Butanoic acid, 4,4,4-trifluoro-3-oxo-,	372-31-6	Not listed				

ethyl ester					
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**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** No information available.

**(j) aspiration hazard;** No data available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects,both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	Not listed	LC50: >= 100 mg/L, 96h semi-static (Oncorhynchus mykiss)	Not listed	EC50=27 mg/L 48h

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	0.21

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

**UN-No** UN1993  
**Proper Shipping Name** Flammable liquid, n.o.s.  
**Technical Shipping Name** (ETHYL 4,4,4-TRIFLUOROACETOACETATE)  
**Hazard Class** 3  
**Packing Group** III

### TDG

**UN-No** UN1993

<b>Proper Shipping Name</b>	Flammable liquid, n.o.s.
<b>Technical Shipping Name</b>	(ETHYL 4,4,4-TRIFLUOROACETOACETATE)
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>IATA</b>	
<b>UN-No</b>	UN1993
<b>Proper Shipping Name</b>	Flammable liquid, n.o.s.
<b>Technical Shipping Name</b>	(ETHYL 4,4,4-TRIFLUOROACETOACETATE)
<b>Hazard Class</b>	3
<b>Packing Group</b>	III
<b>IMDG/IMO</b>	
<b>UN-No</b>	UN1993
<b>Proper Shipping Name</b>	Flammable liquid, n.o.s.
<b>Technical Shipping Name</b>	(ETHYL 4,4,4-TRIFLUOROACETOACETATE)
<b>Hazard Class</b>	3
<b>Packing Group</b>	III

## 15. Regulatory Information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	X	ACTIVE	-

#### Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)** Not applicable

**TSCA 12(b) - Notices of Export** Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	-	X	206-750-7	X	X		-	-	-

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations** Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**Authorisation/Restrictions according to EU REACH** Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	-	-	-

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	Not applicable	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

See table for values

Component	OECD PFAS	US (EPA) PFAS	EU (ECHA) PFAS	UK (HSE) PFAS	Chemsec PFAS (Sin List)
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester (CAS #: 372-31-6)	-	-	Listed	Listed	Listed

**PFAS Legend**

Listed = Meets the PFAS definition of the named authority

## Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Butanoic acid, 4,4,4-trifluoro-3-oxo-, ethyl ester	372-31-6	Not applicable	Not applicable	Not applicable	Not applicable

## 16. Other Information

## Prepared By

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## Creation Date

16-Apr-2012

## Revision Date

18-Dec-2025

## Print Date

18-Dec-2025

## Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**